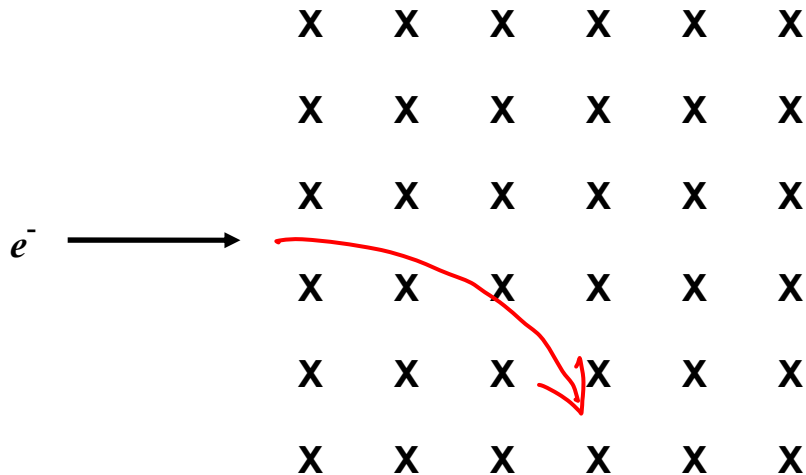


Example #4: An electron travelling at 2.5×10^7 m/s enters a magnetic field of strength 4.1×10^{-3} T as shown below. Note that the field lines, represented by 'X', are into the page, and are perpendicular to the electron's path.



- What is the magnetic force that acts on the electron once it enters the field?
- Use the left-hand rule (remember, this is a negative charge) to sketch the path of the electron in the field.

$$F_{\text{mag}} = qvB$$

$$= (1.6 \times 10^{-19})(2.5 \times 10^7)(4.1 \times 10^{-3})$$

$$F_{\text{mag}} = 1.6 \times 10^{-14} \text{ N}$$